

Health Insurance: An experiential view

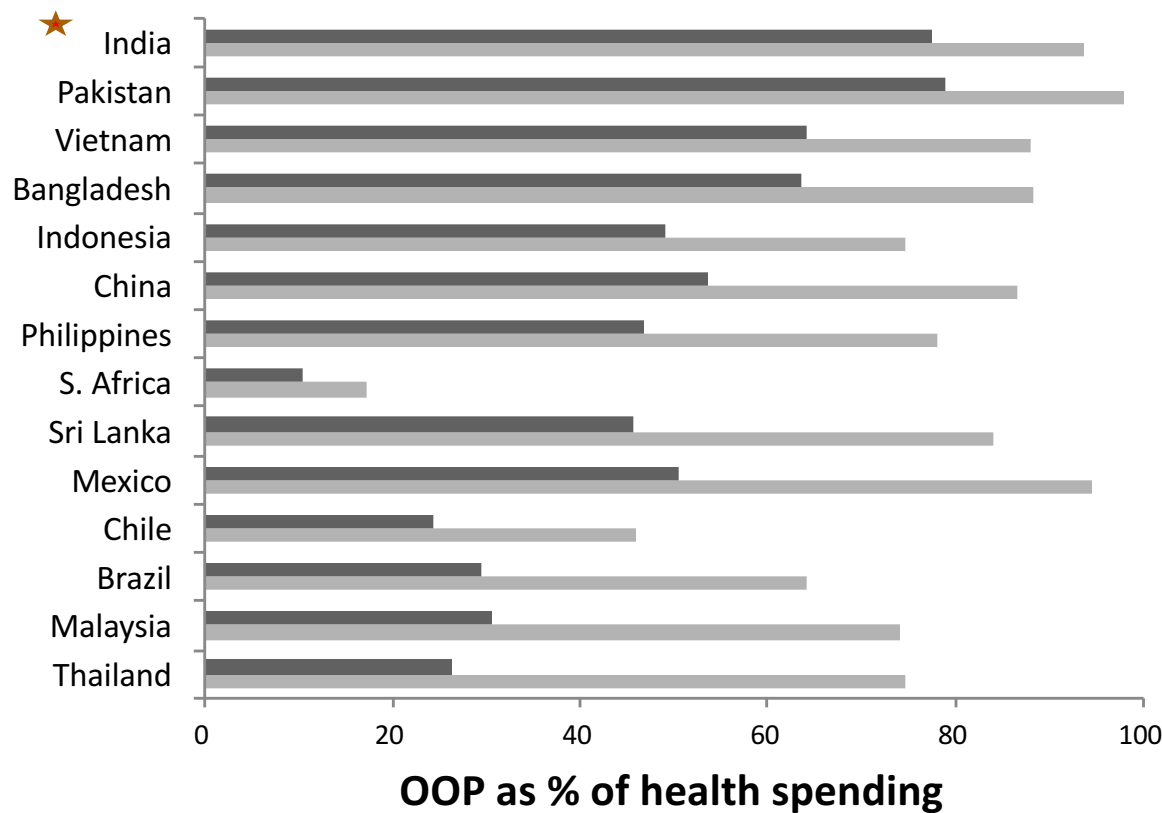
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Why health insurance

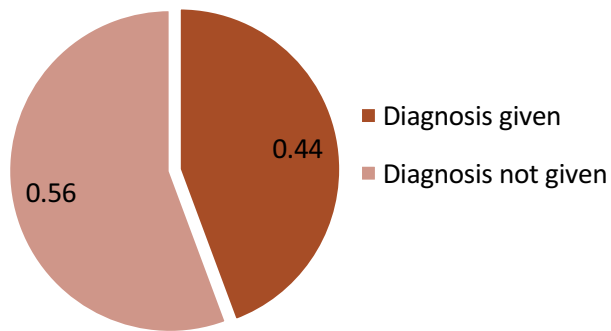


People lack financial protection when they fall sick (Gertler and Greuber 2002)

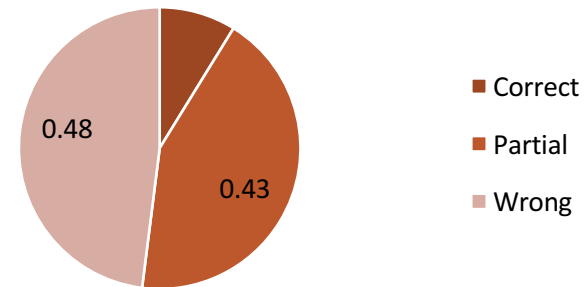
- Traditional systems of tax-financed public clinics, free (once user-fees removed) at point of care are not working well
- Out of pocket expenditures are very high

Why is free public care not enough?

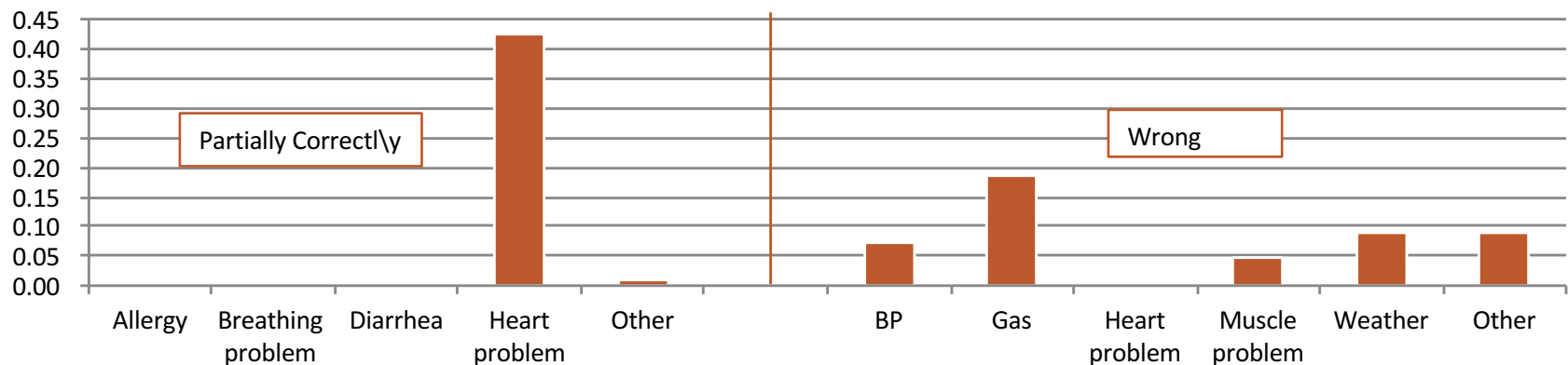
MI - Diagnosis given at all?



Diagnosis Correct, if given? (% of interactions)

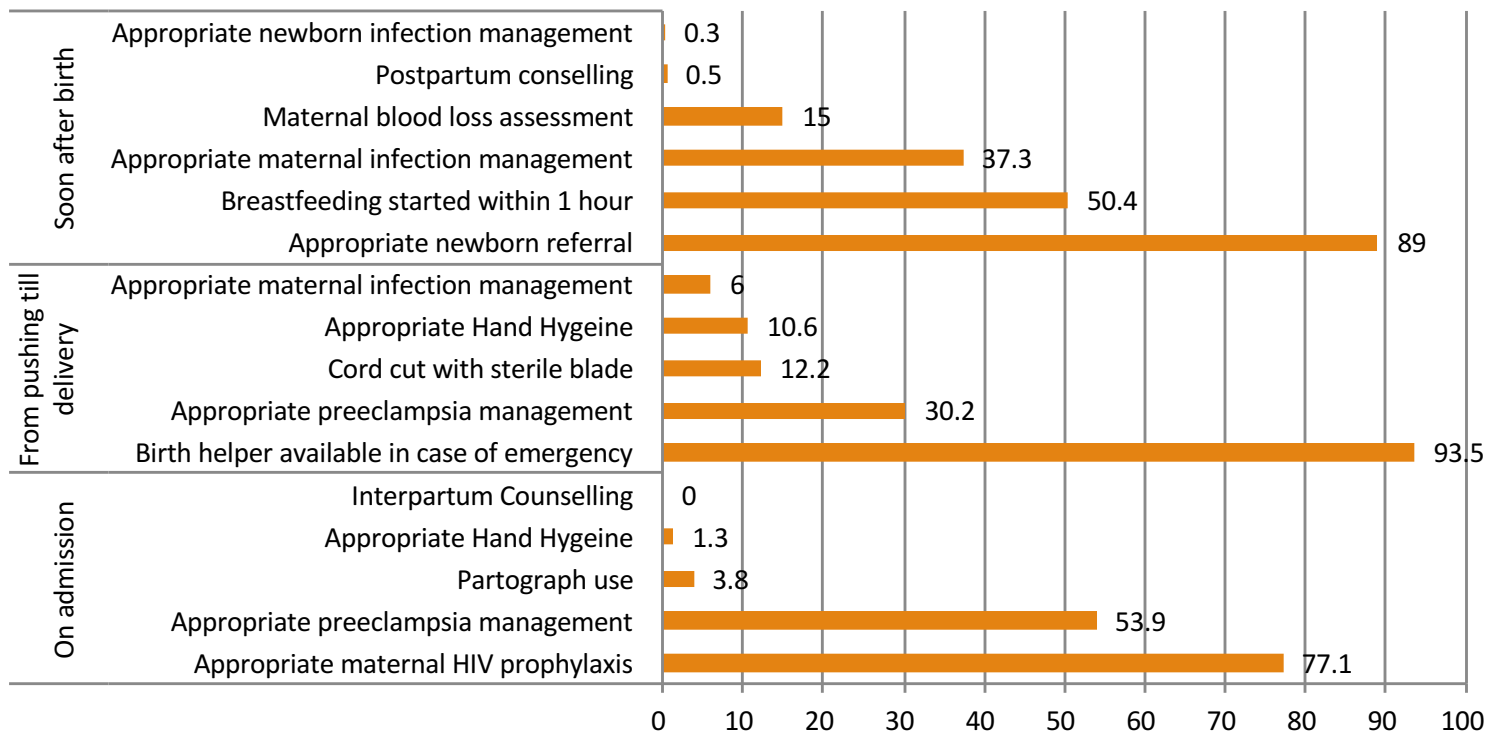


Partially correct and wrong diagnoses, if given (% of interactions)



Another example

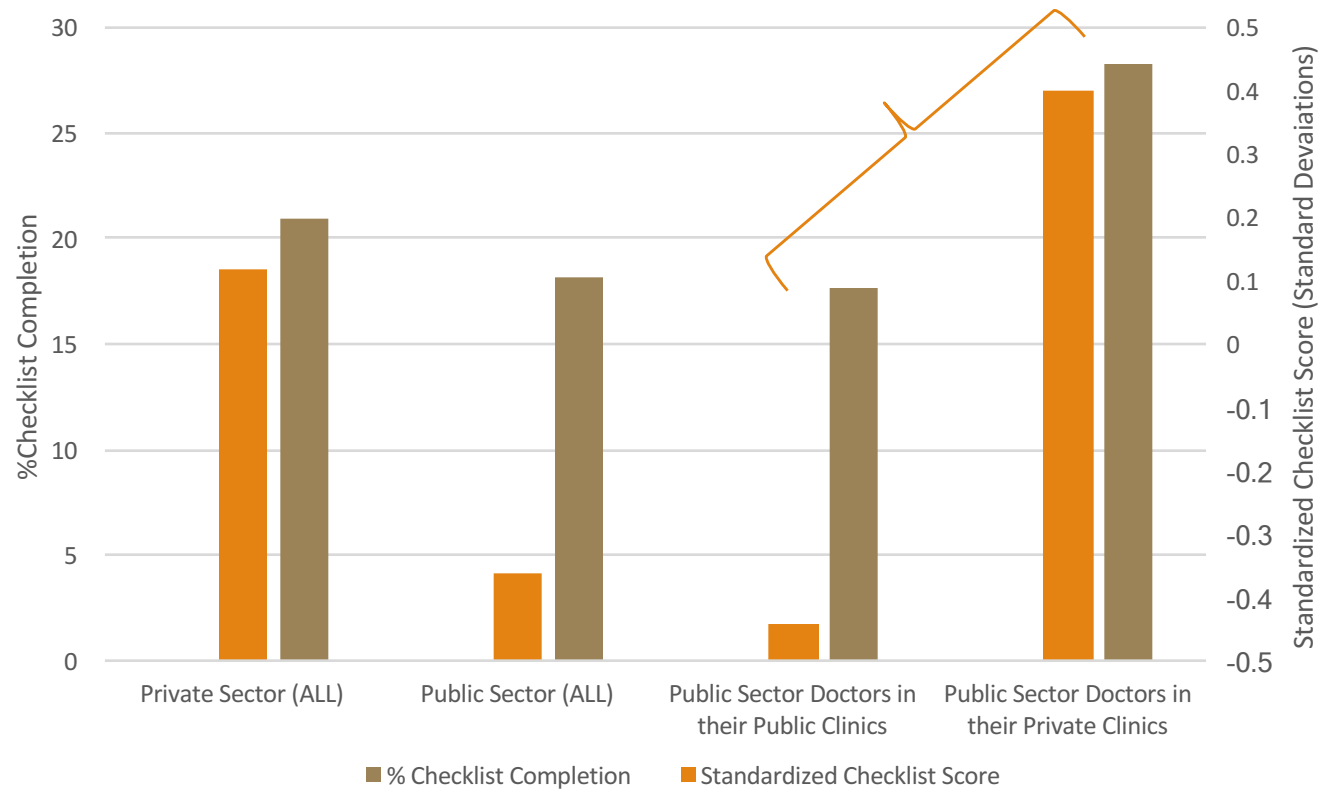
What happens in a sub-district hospital during labor?



Quality of care can be exceedingly low

And a big portion may be effort

The same provider has the lowest checklist adherence in their public sector clinic....and the highest in their private sector clinic



Why health insurance

Alternate model of financial protection moving away from tax-financed free public healthcare

This model (at least the one I was involved with in India)

- Allows for private insurers (removes monitoring function to the private sector)
- Allows for private sector health providers (presumably better addressing the problem of low effort in the public sector)

As discussed below, the basic tax-financed model does not change, as in patients are not asked to pay directly for care

Health insurance is *different* from other insurance

Standard insurance product

- 2 equally likely states of the world W(ell) and S(ick)
- Payoff in W = 150, S=50
- Insurance: Pay 50 upfront. If W receive 0, if S, receive 100
- Therefore receive 100 whether W or S (150-50 if W, 50+100-50 if S)
- Because $U(\cdot)$ is concave, person is better off purchasing insurance

Basis Risk

- Payment does not depend on W or S, but on a signal, $Q=1$. When W, $Q=1$ with prob. P . When S, $Q=1$ with prob. P' , $P' > P$
- Suppose W. Then payoff is $(1-P)*100 + P*225$
- Suppose S. Then payoff is $(1-P')*0 + P'100$
- Straightforward to see that insurance can *increase* risk if basis risk sufficiently high

Basis risk in health insurance

Dercon and Zeitlin: Basis risk arises because your insurance may not be honored when you go to a health facility

- “We don’t offer that service here”
- “We have not received the materials to do that right now”
- “We can do that, but you have to pay extra”

Health insurance is different from other insurance because, instead of a direct cash payout, you receive the *promise of a service*

- You have to trust that the service will be delivered at sufficient quality to cure you
- In order for this to happen, we have to understand the supply side of the medical marketplace better and particularly the link between price and service

This presentation

Briefly describe India's inpatient health insurance, RSBY, on which I worked in the initial stages between 2006 and 2009

- By then, >50 million people enrolled

Describe (what I think) is a fundamental problem with the scheme (prices)

- Clarify why solutions are unclear

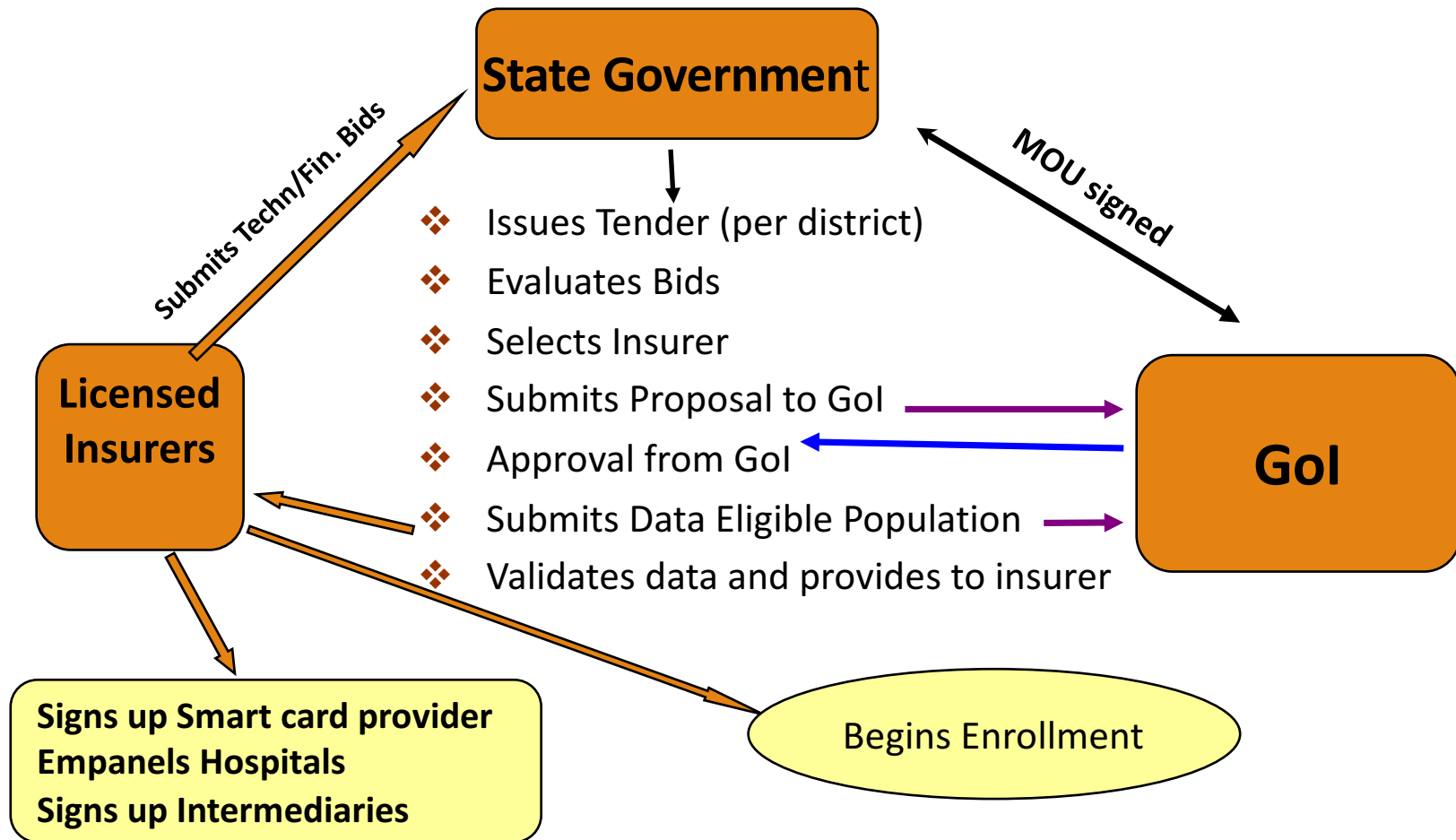
What is the RSBY

RSBY to provide insurance for outpatient care to potential population of 60 million poor households

- Poor identified as “Below Poverty Line” or BPL by individual states

Parameter	Description	Additional comments/caveats
Benefits covered	Cost of hospitalization for 700+ procedures at empanelled hospitals up to 30,000 rupees per annum per household plus 100 rupees transport cost per visit up to 1000 rupees.	Pre-existing conditions are covered; minimal exclusions; day surgeries covered;
Eligibility criteria	Must be on the official state BPL list; limited to five members of the household including household head, spouse and three dependents	All enrolled members must be present to be enrolled; infants are covered through mother
Premium and fees	30 rupee registration fee per household per annum paid by household; Per household premium payment determined through competitive bidding process;	Average premium for active districts is around 500 rupees
Policy period	One year starting the month after first enrolment in a particular district	Enrolment can take place over four months
Financing	75%/25% Government of India/State Government	The ratio is 90%/10% in Northeast states and Jammu and Kashmir

The scheme



Incentives in the RSBY

	Government	Insurance Company	Hospitals	Households
Enrollment	If benevolent, wants to maximize	Full incentives for healthy: Payout = Enrollment * Premium	Partial Incentives	Full Incentives (especially for those with pre-existing conditions)
Utilization	If benevolent wants to optimize	Wants to minimize	Want to maximize if $P > MC$	Use as needed
Fraud	To reduce premiums, reduce fraud	Wants to minimize	Want to maximize	Depends on time and expectations
Information	Wants to maximize	On Enrollment only and only for healthy	Partial on enrollment and utilization; more for sick	

Enrollment

Huge Variation across states and insurers with most problems on supply side: BPL lists outdated (Delhi), FKO officers absent (Gujarat solution), Seasonal migration, State government involvement, Natural disaster (Bihar)

Table 1. Status of enrollment

State	Number of districts ¹	Number of BPL families ²	Number of BPL families enrolled ³	Take-up ratio
Delhi	1	298954	41990	14.00%
Jharkhand	5	1266429	388360	30.70%
Tamil Nadu	2	454736	149520	32.90%
Rajasthan	4	348252	120123	34.50%
Punjab	8	276778	109495	39.60%
Uttar Pradesh	15	1994586	834871	41.90%
Maharashtra	17	2140187	911654	42.60%
Kerala	14	2687869	1173388	43.70%
Uttarakhand	2	117940	53940	45.70%
Bihar	6	1845667	893742	48.40%
Goa	2	6953	3505	50.40%
Chhattisgarh	3	431111	222495	51.60%
Gujarat	10	1130034	682354	60.40%
West Bengal	2	630659	412493	65.40%
Haryana	20	1066877	702672	65.90%
Chandigarh	1	8000	5407	67.60%
Nagaland	2	37908	28570	75.40%
Himachal Pradesh	2	97295	80242	82.50%
Total	116	14840235	6814821	45.9%

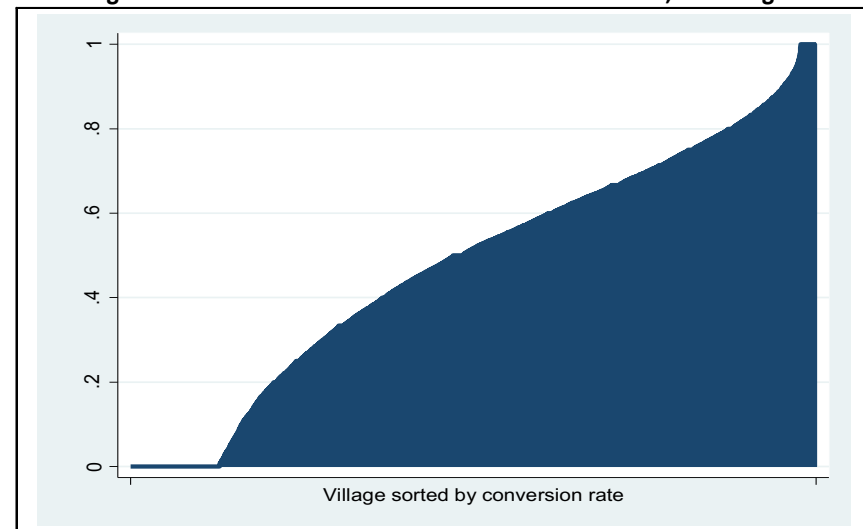
Source: www.rsby.gov.in

Note: 1) only include districts which rolled out RSBY program the first time and the commencement date of enrollment is between February of 2008 and July of 2009

2) only include the BPL families given to insurance companies for enrollment purpose

3) as data reported as of January 20, 2010

Figure 1. Variation in RSBY enrolment rates across 17,000 villages



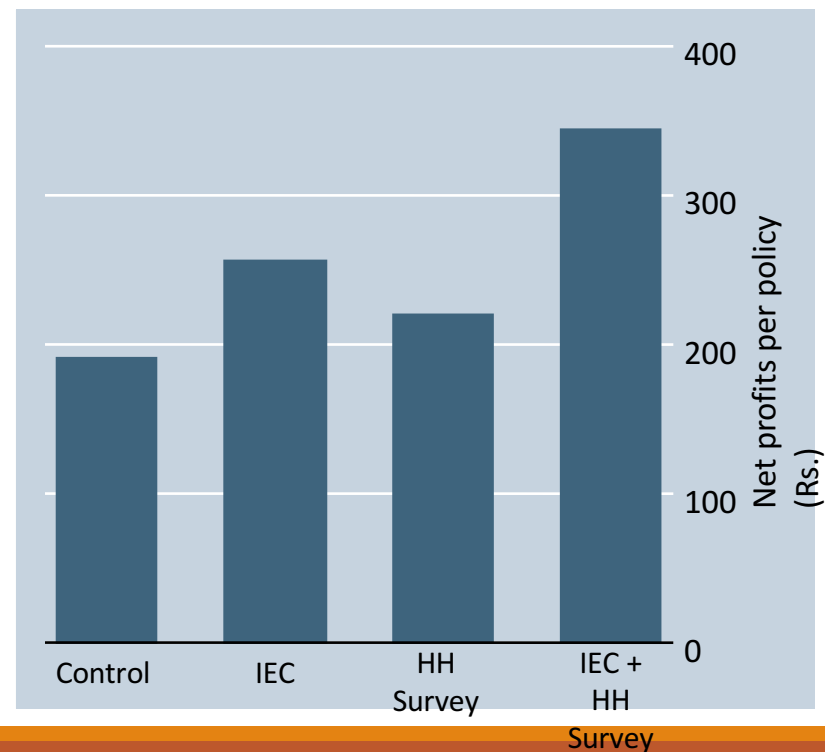
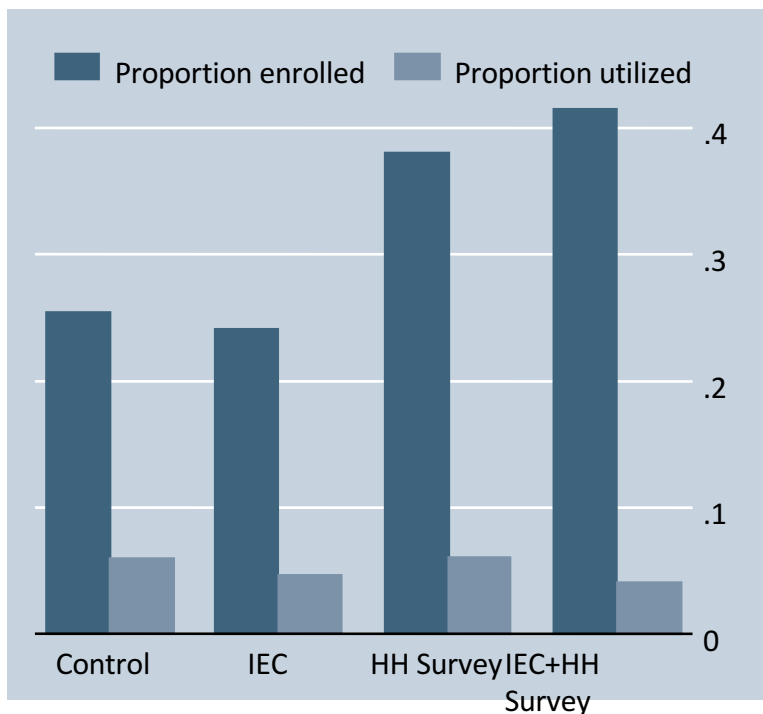
Source: RSBY backend database

Regression: villages with higher BPL population have higher enrollment; public insurers insure fewer people

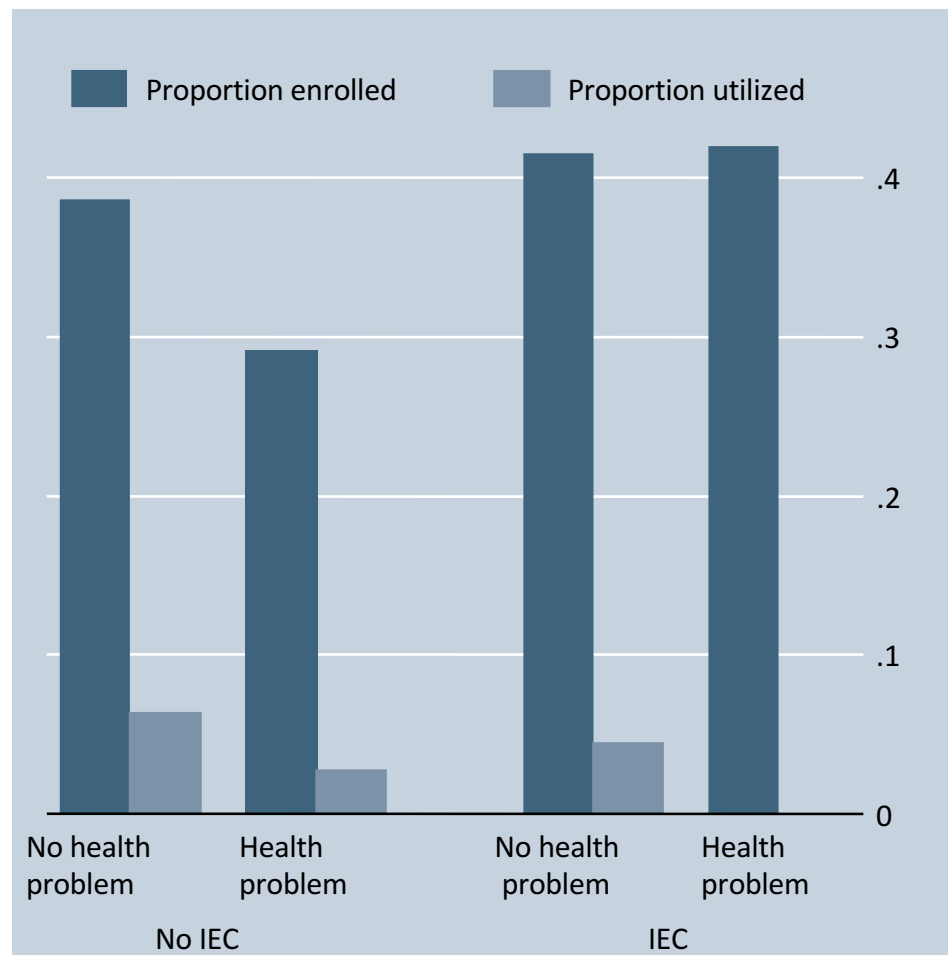
Demand side-factors also mattered

Randomized Information campaign and household survey (Das and Leino, *Economic and Political Weekly*)

- IEC had no impact on enrollment, household survey increased enrollment (use administrative data)
- Profits higher for marginally enrolled household: sick more likely to enroll first



But random stuff as well...



What was going on

Called up 70 hospitals pretending to be a patient sick with a specific illness

- Told that the service was not offered, or I would have to pay (a lot) more for the service

A problem of prices

- Prices are set by the state nodal agency, which does not know how to set prices
- A list of prices was drawn up by visiting the smaller nursing homes and hospitals
- But these were not the somewhat larger hospitals ultimately empaneled by the insurance company and the prices were too low for the empaneled hospitals to provide service
- Note, fully incentive compatible for insurance company, and no organized lobby on hospital side

Sets up significant basis risk in the scheme



Prices in healthcare

Prices in healthcare can lead to efficient outcomes *only* under very stringent condition

Example: C-section or normal delivery.

- If $\text{profit}(\text{C-section}) = \text{profit}(\text{normal delivery})$ then efficient outcome
- Can show that market will provide these prices under stringent conditions (Dulleck and Kerschbammer, Journal of Economic Literature)

Prices in healthcare

But note that 'too much' (C-section when normal required) or 'too little' are mutually exclusive

In reality, patients receive a *vector of treatments*

Very little in the theory that prevents a patient with a skin disease from receiving an X-ray, a Cat-scan and a steroid with or without a correct diagnosis

Example: Ongoing work with Jeffrey Hammer and Aakash Mohpal in primary care

Necessary and avoidable costs in SPs

All providers and all cases	Effort (Standardized patients)			Total
	Correct treatment/efficient treatment	Over treatment/more than efficient	Incorrect treatment/inefficient treatment	
Fraction of cases	0.154	0.418	0.428	
Average cost	12.4	36.0	30.5	30.0
Necessary costs	12.4	18.4	0.0	9.6
Avoidable costs	0.0	17.4	30.5	20.3
Percentage avoidable	0.0	67.9	100.0	75.8

We don't know if (and how) insurance exacerbates these problems

Prices in healthcare


We are able to show (Das et al. *AER*) that

- Prices in an unregulated private market are correlated with the likelihood of correct treatment
- But they are uncorrelated with likelihood of unnecessary treatment
- We do not know why unnecessary treatments are limited in reality

We are also able to show that these markets face enormous excess capacity (primary care, but anecdotally, tertiary care as well)

- Health care providers spend on average 1-2 hours a day seeing patients
- Numbers are similar in rural areas of many other countries (1 patient a day in Nigerian PHCs)
- Marginal cost of labor is zero, and much lower than average cost

Therefore, these are vertically differentiated markets with excess capacity



Key question in health insurance

How can you (is it even possible) to set prices so that the provider does the right (illness-specific) action and treatment?

What should the goal be? Efficient prices? Sufficient care?

What effect will this have on quality in a vertically differentiated market if there is a single price for a service?

What happens when hospitals have (tremendous) excess capacity?

What are the data and institutional arrangements you need to make this happen?

What is the feedback mechanism and how are we going to get those data?

How does this all work in a federal system in terms of central and state responsibilities?

- Especially if state incentives are diluted due to federal matching grants?

Options?

It seems like inpatient care is a key area for government action, due to the failure of informal insurance market

But it is unclear whether moving down the route of using prices and subsidized insurance is a substitute for the poor governance of tax-funded free public care

- If regulation/oversight are complements to provision, both will result in poor services

One option is to give up on optimal pricing all together and hope that between household demand, hospital incentives and insurance company incentives, some kind of equilibrium holds that is better

Either way, a system that allows us to at least understand what is happening and what may happen seems like a reasonable ask